This question paper contains **2** printed pages]

SB—65—2022

FACULTY OF SCIENCE & TECHNOLOGY

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

MAY/JUNE, 2022

(CBCS/New Course)

PHYSICS

Paper-VIII

(Optics and Lasers)

(Monday, 13-06-2022) **Time : 2.00 p.m. to 4.30 p.m.**

Time— 2.30 Hours *Maximum Marks*—40

N.B. :— (*i*) Attempt *all* questions.

(*ii*) Illustrate your answers with suitably labelled diagrams, wherever necessary.

1. Explain in detail Ramsden eyepiece with Cardinal points. 15

Or

(*a*) Explain construction and working of Michelson Interferometer. 8

(*b*) With well labelled diagram explain cardinal points of Huygen's eyepiece. 7

2. Explain the double refraction phenomenon with properties of O-ray and E-ray. 15

Or

(*a*) Explain the working of Nicol Prism. 8

(*b*) Explain population inversion in laser. 7

P.T.O.

3. Write short notes on (Attempt any *two* of the four) 10

(*a*) Principal point and Principal plane

(*b*) Newton's Rings

(*c*) Malus law

(*d*) Spontaneous and Stimulated emission.